

REMARKS

Status of the Claims

Claims 1-14 are pending in this application, the independent claims being claims 1 and 8. By this amendment, claims 1 and 3 are amended, and claims 12-14 are newly presented.

Summary of Official Action

In the Official Action, claims 1, 2, 4 and 5 were rejected under 35 U.S.C. 102(b), as anticipated by U.S. Patent No. 3,566,869 (Crowson), and claims 3, 6 and 7 were rejected under 35 U.S.C. 103(a), as unpatentable over the Crowson '869 patent in view of U.S. Patent No. 5,443, 386 (Viscup).

Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

Allowed Subject Matter and Claims

Applicants gratefully acknowledge the Examiner's indication that the application contains allowable subject matter, and that claims 8-11 are allowed.

Claim Amendments

The rejections of the claims over the cited art respectfully are traversed. Nevertheless, without conceding the propriety of the rejections, claims 1 and 3 have been amended more clearly to recite various novel features of the claimed invention, with particular attention to the Examiner's comments, and claims 12-14 have been amended to provide Applicants with additional scope of protection commensurate with the disclosure. Support for the amendments may be found in the application as originally filed. No new matter has been added.

Claimed Invention

The present invention relates to a novel dental system and method for cleaning a user's teeth and marginal gingiva with a drug solution. In one aspect, as recited in independent claim 1, the claimed invention relates to a dental system for cleaning a user's teeth and marginal gingiva with a drug solution, comprising a mouthpiece, a supply unit, a drain unit and a suction unit. The mouthpiece is made for the user, each mouthpiece having a shape unique to the user, the shape being substantially the same shape as the teeth and the marginal gingiva of the user. The mouthpiece is a laminate structure including a first resin layer portion and a second resin layer portion adhered to the first resin layer portion. The first resin portion conforms to and seals with the user's marginal gingiva and jaw. The second resin portion conforms to the user's teeth and marginal gingiva, and provides a gap between the mouthpiece and the user's teeth and marginal gingiva, where a width of the gap corresponds to a thickness of the second resin layer portion. The supply unit is connected to the mouthpiece and supplies the drug solution to the mouthpiece. The drain unit is connected to the mouthpiece and collects the drug solution supplied to the mouthpiece by the supply unit. The suction unit is connected to the drain unit and introduces the drug solution from the supply unit into the mouthpiece by applying suction to the drain unit, where the suction unit provides a negative pressure within the gap and forms a stream of the drug solution flowing through the gap that cleans the user's teeth and marginal gingiva.

Prior Art Distinguished

Applicants submit that the prior art fails to anticipate the claimed invention. Moreover, Applicants submit that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

The Crowson '869 patent relates to a vacuum-utilizing hygienic teeth-cleaning system, and discloses a system including a mouthpiece 1, a supply unit 2 connected to the mouthpiece by a conduit 5, a collection unit 3 connected to the mouthpiece by conduit 6,32, and a suction pump unit 4 connected to the collection unit by a conduit 7,34. However, Applicants submit that the Crowson '869 patent fails to disclose or suggest at least the above-described features of the claimed invention. Initially, the Crowson '869 patent discloses a mouthpiece made of a rigid molded plastic piece having upstanding, curved flanges 12 and downwardly extending, curved flanges 14 (column 1, lines 50-55); although the Crowson '869 patent teaches that one of a number of sizes of mouthpiece may be selected, e.g., for use by adults and children, the mouthpieces are not required to fit closely over the teeth (column 1, lines 19-21). In fact, the Crowson '869 patent teaches a mouthpiece including a looped conduit 16 leading to a plurality of spray-forming apertures 17 located around the mouthpiece for spraying a dentifrice solution over the teeth within the mouthpiece (column 1, lines 56-66). Nowhere does the Crowson '869 patent disclose or suggest the features of a mouthpiece that conforms to and seals with a user's marginal gingiva and jaw, and conforms to and provides a gap with the user's teeth, where the gap corresponds to a thickness of a sealing layer of a laminate mouthpiece structure, as disclosed in the present application and recited in claim 1.

Applicants submit that the Viskup '386 patent fails to remedy the deficiencies of the Crowson '869 patent.

The Viskup '386 patent relates to a toothbrush and method for treatment of periodontal disease, and discloses a customized tooth cleansing device including bristles customized for a user's teeth, and a conduit for irrigating the user's mouth with a cleansing, medicinal, or antibiotic solution (abstract). However, Applicants submit that the Viskup '386 patent fails to disclose or suggest at least the above-discussed features of the claimed

invention. Rather, the Viskup '386 patent merely discloses a mouthpiece 22 made of a rigid molded plastic and having a sealing member 21 made of a soft molded plastic. Nowhere does the Viskup '386 patent disclose or suggest the features of a laminated mouthpiece structure including a first layer, made of a first (e.g., flexible) resin material, contacting and conforming with the marginal gingiva, and a second layer, made of a second (rigid) resin material, conforming with the contours of the user's teeth and marginal gingiva, where the second layer defines a gap between the second layer and the user's teeth, and a width of the gap corresponds to the thickness of the first layer, as disclosed in the present application and recited in claim 1. Nor is the Viskup '386 patent understood to add anything to the Crowson '869 patent that would make obvious the claimed invention.

For the above reasons, Applicants submit that claim 1 is allowable over the cited art.

Claims 2-7 and newly presented claims 12-14 depend from claim 1, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of base claim 1, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Information Disclosure Statement

By separate paper filed concurrently herewith, Applicants have submitted an Information Disclosure Statement identifying additional art that may be pertinent to the examination of the present application. Applicants have reviewed the information and believe that the present claims are allowable thereover.

Conclusion

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submit that the application is in condition for allowance. Favorable consideration of the claims and passage to issue of the application at the Examiner's earliest convenience earnestly are solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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